

REMARKS

Claims 1-9, 12-19 and 22 are now pending in the above-referenced patent application. Applicants respectfully request further consideration of these claims, in view of the amendments set forth above and the following remarks.

Rejections Under 35 U.S.C. § 102(b) (Charmot)

The Office action rejects claims 1-9, 12-19 and 22 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,395,850 (hereafter "Charmot").

Applicants respectfully traverse these rejections.

Charmot is directed to dithio compounds useful in assisting in polymerization of monomers in a free radical polymerization, polymers made with those compounds and methods of polymerization. Charmot lists a large number of monomers that can be polymerized with the dithio compounds. See Charmot, column 10, lines 1-57. Charmot also teaches that the polymers can be copolymers and can be random or block copolymers. The examples in Charmot only involve homopolymerizations.

Independent claim 1 of the present invention requires polymerizing a liquid hydrophilic monomer under polymerization conditions in the presence of a dithio-containing control agent to create a hydrophilic block and subsequently reacting the hydrophilic block with an olefin monomer capable of free radical polymerization under polymerization conditions to form an olefinic block. The resulting block copolymer can change the surface tension of an olefinic substrate by an amount of at least 10 mN/m.

Independent claim 12 of the present invention is directed to a method of preparing a block copolymer having at least one hydrophilic block and one olefinic block, and requires polymerizing an olefinic monomer under free radical polymerization conditions in the presence of a dithio-containing control agent to create at least one olefinic block and subsequently reacting the olefinic block with a hydrophilic monomer capable of free radical polymerization under polymerization conditions to form a hydrophilic block.

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Independent claim 22 of the present invention is directed to a method of preparing a block copolymer having at least one hydrophilic block and the structure A-R. R represents a random block comprising at least two monomers. The method requires polymerizing a hydrophilic monomer under free radical polymerization conditions in the presence of a dithio-containing control agent to create at least one hydrophilic block and subsequently reacting the at least one hydrophilic block with at least one olefinic monomer and one monomer that is hydrophilic with respect to the olefinic monomer capable of free radical polymerization under polymerization conditions to form the random block, and at least partially hydrogenating the random block.

Charmot does not specifically disclose the methods of independent claims 1, 12 or 22. The Office action relies on the extensive list of monomers in Charmot to support the rejections.

When the compound is not specifically named, but instead it is necessary to select portions of teachings within a reference and combine them, e.g., select various substituents from a list of alternatives given for placement at specific sites on a generic chemical formula to arrive at a specific composition, anticipation can only be found if the classes of substituents are sufficiently limited or well delineated. Ex parte A, 17 USPQ2d 1716 (Bd. Pat. App. & Inter. 1990). If one of ordinary skill in the art is able to "at once envisage" the specific compound within the generic chemical formula, the compound is anticipated. One of ordinary skill in the art must be able to draw the structural formula or write the name of each of the compounds included in the generic formula before any of the compounds can be "at once envisaged." One may look to the preferred embodiments to determine which compounds can be anticipated. In re Petering, 301 F.2d 676, 133 USPQ 275 (CCPA 1962).

See MPEP 2103.02.

In the present invention, independent claims 1, 12 and 22 require specific types of monomers to be polymerized in a specific order to create specific types of polymers. The methods combining these features are not specifically disclosed in Charmot. Instead, Charmot discloses a laundry list of monomers that can be polymerized using the dithio compounds disclosed therein. While the monomers have properties, such as being hydrophilic or being an olefin, there is no teaching in Charmot of combining monomers having those properties in the ways as claimed in the present invention. Applicants submit that one of ordinary skill in the art would not envisage the method claims of the present invention because Charmot does not speak to the combination of hydrophilic monomers and olefin monomers in the manners as claimed.

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Additionally, the Office is relying on inherency to disclose the feature of block copolymer being able to change the surface tension of an olefinic substrate by an amount of at least 10 mN/m as required in claim 1. Applicants respectfully submit that such reliance is inappropriate. Inherency may not be established by possibilities or probabilities; rather, the required feature must necessarily follow from the teaching of the reference. See MPEP 2112; Continental Can Company USA vs. Monsanto Company, 20 USPQ2d 1746 (Fed. Cir. 1991). In the present case, creating a block copolymer that can change the surface tension of an olefinic substrate by an amount of at least 10 mN/m would not necessarily occur in the polymerizations of Charmot. Properties of resulting copolymers as claimed are dependent on many factors, including monomer concentrations and types as well as other reaction conditions, such as temperature, time, pressure, etc. Polymerizing block copolymers as taught in Charmot, may or may not result in polymers that can change the surface tension of an olefinic substrate by an amount of at least 10 mN/m, but will not always do so. A skilled artisan would not, therefore, have considered Charmot to teach a method that is specifically directed to polymerizing polymers as claimed.

The only specific compositions disclosed in Charmot are in the examples which are homopolymers. Whether the homopolymers have the properties recited in claim 1 is immaterial as the present claims are directed to methods of making block copolymers. There are no specific block copolymers disclosed in Charmot, only the general teaching that the list of monomers may be polymerized and that block copolymers can be created. Therefore, no structure in Charmot inherently possesses the properties of the copolymer of claim 1. A skilled artisan would not, therefore, have considered Charmot to teach a method that is specifically directed to creating of polymers having properties as recited in independent claim 1.

Finally, independent claim 22 requires at least partially hydrogenating the random block. This is not taught anywhere in Charmot.

For at least these reasons, Applicants request that the rejections be withdrawn.

Obviousness-Type Double Patenting Rejections

Claims 1-9, 12-19 and 22 have been rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1-20 of Charmot, as allegedly being unpatentable over claims 8-16 and 20-26 of U.S. Patent No. 6,767,968

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(hereafter "the '968 patent"), and as allegedly being unpatentable over claims 1-13 of U.S. Patent No. 6,569,969 (hereafter "the '969 patent").

Applicants respectfully traverse this rejection.

The claims at issue are patentably distinct from the claims in Charmot, the '969 patent and the '335 patent. The present claims require making specific types of block copolymers using dithio control agents. Independent claim 1 requires polymerizing a liquid hydrophilic monomer in the presence of a dithio-containing control agent to create a hydrophilic block and subsequently reacting the hydrophilic block with an olefin monomer to form an olefinic block. The resulting block copolymer can change the surface tension of an olefinic substrate by an amount of at least 10 mN/m. Independent claim 12 requires polymerizing an olefinic monomer in the presence of a dithio-containing control agent to create an olefinic block and subsequently reacting the olefinic block with a hydrophilic monomer capable to form a hydrophilic block. Independent claim 22 requires polymerizing a hydrophilic monomer under free radical polymerization conditions in the presence of a dithio-containing control agent to create at least one hydrophilic block and subsequently reacting the hydrophilic block with an olefinic monomer and one monomer that is hydrophilic with respect to the olefinic monomer to form the random block, and at least partially hydrogenating the random block.

The claims of Charmot recite polymerizing one or more monomers using a dithio control agent. The claims of Charmot also teach that the polymer can be a block copolymer. The claims of Charmot do not even hint at the specific steps using specific monomer types in the order as recited in the claims of the present invention, the resulting properties of the polymers as claimed in independent claim 1 and claims dependent thereon, or the step of hydrogenating the random block as claimed in independent claim 22. To the extent that the Office action is relying on the specification of Charmot to fill in any missing gaps, Applicants submit that this is improper. "[C]omparison can be made only with what invention is *claimed* in the earlier patent. . . . Our precedent makes it clear that the *disclosure* of a patent cited in support of a double patenting rejection cannot be used as though it were prior art" General Foods Corp. v. Studiengesellschaft Kohle mbH, 972 F.2d 1272 1280-1281, 23 USPQ2d 1839 1845-1846 (Fed. Cir. 1992). The present claims are not directed generally to making polymers with dithio control agents, but recite specific methods to do so, that are not obvious. The Office action has provided

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no reasonable basis for supporting a case that the present claims are obvious over the claims of Charmot.

The claims of the '968 patent are directed to block copolymers having hydrophilic and hydrophobic components. The claims of the '968 patent do not even hint at the use of a dithio control agent being used to make the copolymers claimed therein as is recited in all of the claims of the present invention, the resulting properties of the polymers as claimed in independent claim 1 and claims dependent thereon, or the step of hydrogenating the random block as claimed in independent claim 22. To the extent that the Office action is relying on the specification of the '968 patent to fill in any missing gaps, Applicants submit that this is improper as discussed above. The present claims are directed to specific methods for making specific types of block copolymers with dithio control agents. The Office action has provided no reasonable basis for supporting a case that the present claims are obvious over the claims of the '968 patent.

The claims of the '969 patent recite polymerizing one or more monomers using a multifunctional control agent. The claims of the '969 patent also teach that the polymer can be a block copolymer. The claims of the '969 patent do not even hint at the specific steps or monomer types as recited in the claims of the present invention, the resulting properties of the polymers as claimed in independent claim 1 and claims dependent thereon, or the step of hydrogenating the random block as claimed in independent claim 22. To the extent that the Office action is relying on the specification of the '969 patent to fill in any missing gaps, Applicants submit that this is improper as discussed above. The present claims are not directed generally to making polymers with dithio control agents, but recite specific methods to do so, that are not obvious. The Office action has provided no reasonable basis for supporting a case that the present claims are obvious over the claims of the '969 patent.

For at least these reasons, Applicants request the double patenting rejections be withdrawn.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

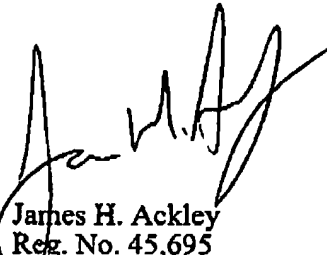
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Applicants believe that no further fees are required in connection with the instant amendment. If necessary, however, the Examiner is hereby authorized to charge any fees required in connection with this application to Deposit Account No. 50-0496.

Respectfully submitted,

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